CONTROL STRATEGY FOR AN ELECTRIC MOTOR USING REAL TIME PREDICTIONS OF MOTOR CAPABILITY BASED ON THERMAL MODELING AND MEASUREMENTS

Abstract of Disclosure

A system and method for controlling an electric motor using real time predictions of motor capability based on thermal modeling and measurements is provided. The invention includes controllers for receiving and processing system input signals, strategies for: determining a maximum energy amount that can be put into the motor before the motor reaches a maximum allowable temperature; determining a motor power assist value that the motor can provide in a predetermined period of time before the motor reaches the maximum allowable temperature; determining a battery power assist value; determining a maximum power assist value that is the minimum of the motor power assist value and the battery power assist value; and comparing the maximum power assist value to a driver demand signal. Strategy outputs can be sent to a vehicle system controller and/or a power assist gauge.

Figures